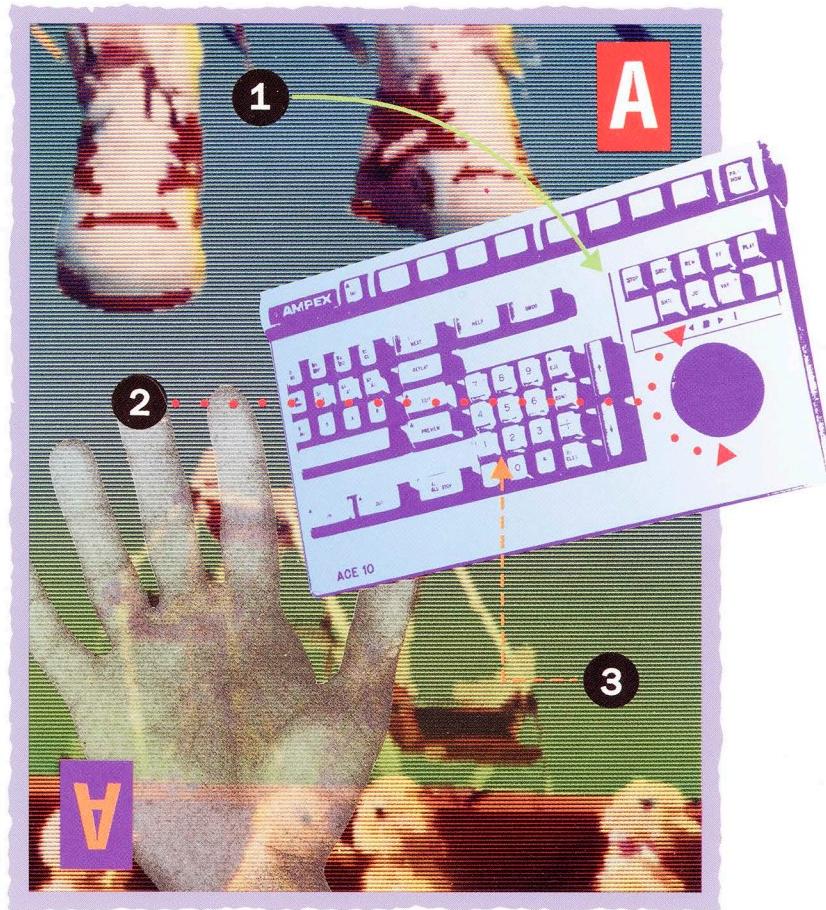


# ACE AMPEX COMPUTERIZED EDITING



**AMPEX**

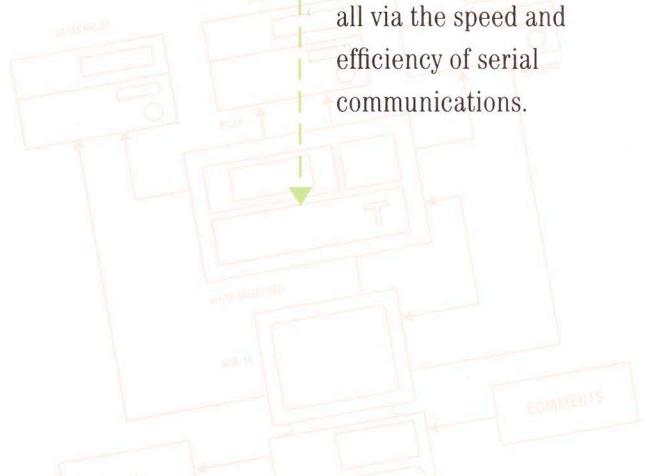
1



# A

**N ACE editor provides you with the centerpiece of a totally integrated post production system. Whether you are controlling a moderate Ampex Betacam system or the most advanced on-line Ampex D-2 suite, the ACE offers unparalleled depth of control. RS-422 serial communications and compatible software throughout make machine and device control a simple plug-in process rather than an engineering nightmare.**

2



The Ampex ACE system approach offers enough flexibility to satisfy any post-production budget, or performance and interface requirement. For example, you can select your switcher from the outstanding Ampex AVC Series, including the incredibly powerful Century and the compact Vista. From multiple MEs, to component or composite applications, there is an ACE editor that is perfectly matched to whichever Ampex switcher you use. Choose from Ampex's complete line of VTRs, from the affordable VPR-80, to the industry type C standard-of-comparison, the VPR-3, to the revolutionary D-2 digital VCR, the VPR-300.

And for small format work, a selection of Betacam SP VCRs. Or choose from three versions of ADO® systems for world-famous digital effects—ACE editors control them all via the speed and efficiency of serial communications.

Of course, ACE editors interface with products from other manufacturers, too. RS-422 compatibility, general purpose interfaces (GPIs), ILC triggers, and superb disk input/output capabilities make an ACE editor the right choice for any equipment configuration.

#### A HUMAN INTERFACE DESIGNED FOR CREATIVITY

ACE editors feature keyboards with logical, uncluttered layouts that position clusters of keys according to function and frequency of use. They're highly efficient and easy to learn and to operate, not only for the experienced editor, but for the beginning editor as well.

Compared with other dedicated keyboards, the ACE keyboards have a modest number of keys; each assigned to execute

a specific function or to provide access to larger function groups. But the true power of any ACE editor is contained within eight soft keys, grouped at the top of the keyboard. These soft keys provide direct access to the powerful software features that all ACE editors offer. And the soft key menus are superbly designed and provide the operator a highly efficient post production tool.

Dedicated keys on the keyboard lead the operator to specific branches of the software "tree," depending on the function requested. All data and features are present, but only displayed "on demand." And in keeping with the overall ACE

dedicated keyboard concept, there's no need to add a new keycap for a new feature—there's always room in the soft key branches.

#### RELIABILITY IN PARTNERSHIP WITH SERVICE

Whatever your ideal ACE post production system, you can be sure it will more than meet your most exacting requirements. You will find that ACE editors come with uncompromising sets of both technical and operational documentation. These materials are designed and written with your needs in mind; so that your experience with an ACE editor will be as trouble-free as possible.

And if your ACE editor should possibly need service, one phone call to one manufacturer brings into action skilled field and technical support personnel to assist you. This Ampex skill and expertise is directed toward one simple, but critical goal—to keep you on-line and productive, day after day, year after year.

#### PROVIDING A TRULY UNIQUE POST-PRODUCTION TOOL

The result of this unique approach to editor design is a family of unprecedented precision instruments that are reliable and cost effective but possess the necessary flexibility and interface simplicity that operators universally seek.

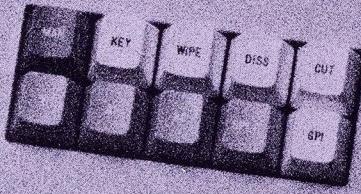
ACE editors simplify, unify, and enhance your total editing environment. It's a system that you can depend on day in and day out, year after year.



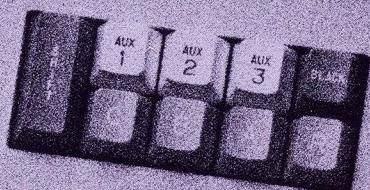
AMPEX

ACE 25

HOME



PREVIEW MODES



MARK EXIT



# ACE 10

## COMPUTERIZED EDITING SYSTEM

### Redefining performance and affordability...

Ampex brings ACE™ editing performance, innovation and reliability to an even wider range of editing situations with the ACE 10 edit controller. Designed for more cost-conscious users, the ACE 10 editor packs unparalleled performance and an advanced human interface into a simple, modular system—a system that offers a comprehensive set of standard features as well as new, innovative functions.

### Designed for creativity and speed...

A totally redesigned keyboard is central to the ACE 10 system's ease of operation and increased productivity. Utilizing the highly acclaimed keyboard from the ACE family of editors as a foundation, the ACE 10 keyboard further consolidates and simplifies the editing

process. A logical, uncluttered layout, improved shift functionality, and task-driven operation all work in tandem to make the job of editing intuitive and precise.

Critical functions such as Tags and Slides, Find, and Slo-mo are a mere keystroke away. Audio and video splits are almost instantly achievable. Simpler, more rational operation allows the editor to be more creative and to complete assignments on time and on budget—and makes news editing faster and easier than ever before.

### Refocusing the editing process...

The key to creative editing is the ability of the editor to concentrate on audio and video; to blend

pictures and sound like an artist blends pigment. To enhance this dynamic relationship, the ACE 10 system incorporates an improved, easy-to-understand status display. The editor can now choose the display geography best suited to a particular editing situation with operator-definable screens. Transport velocity and direction are expressed via innovative transport graphics within the display geography. Off-line editing is significantly enhanced with EDL zoom.

By incorporating these versatile tools into the ACE 10 system, Ampex provides the editor with a combination of technology and simplicity that makes every editing task a more intuitive and productive experience.



## ACE 10 SPECIFICATIONS

### GENERAL

The ACE-10 is an NTSC and PAL computer-based editor which controls up to 3 VTRs (2 source, 1 record), two RS-422 switcher ports and 4 GPI ports. The ACE-10 system also includes a 3.5" floppy disk drive, two RS-232 outputs, and a parallel printer output port.

### STANDARD FEATURES

- 80286 CPU (10 MHz)
- 640 Kbytes onboard RAM
- 250 line SMPTE EDL
- Dedicated keyboard with multi-function rotary knob
- One 3.5" floppy disk drive
- 14" monochrome monitor
- Comments keyboard
- 5-channel Intelligent Line Controller
- 4 GPI output ports
- Operator selectable displays
- User files
- Transport graphics
- Help texts
- Auto assembly
- Battery backed RAM stores Operator and hardware files
- Initialization parameters

### FUNCTIONS

#### DEVICE/CHANNEL SELECTION

- Three (3) total transport
- (Record, A, B)
- Aux, Black
- Audio Channels 1 and 2

#### MOTION CONTROLS

- Variable Shuttle
- Jog
- Variable Play
- Play
- Rewind, Fast Forward
- Stop
- Cue, Search Entry, Search Exit
- Slo-mo Set-in Edit

#### EDIT TRANSITION FUNCTION

- Cut, dissolve, wipe, split key
- Split video
- Split audio 1 and 2
- Split cut in, cut out
- Split mix in, mix out
- Split cut, split mix
- Delayed effects
- Key cut in, cut out
- Key mix in, mix out
- Key mix in, mix out (single edit)
- Downstream key effects
- Downstream fade to black
- Wipe keys
- Switcher preview mode from rotary knob
- Switcher preview play mode

#### TIMECODE FUNCTIONS

- 525 full and nondrop frame
- 625 full frame
- Set in, Set out
- Mark in, mark out
- Trim in, trim out
- EDL undo
- ECL undo
- Transfer sets, trims, durations
- Auto source tag
- Auto tag
- Tag (reel, EDL, sync)
- Auto clean tails (on/off)
- Pick/Put functions
- Recall last edit
- Fill mode
- Contant register

#### PERFORM/PREVIEW FUNCTIONS

- Timecode or CT editing
- Insert and assemble
- Sequential auto assemble
- Preview assemble
- Open ended editing
- Position editing
- VVV, BVB previews
- Effect only preview with rotary knob
- Effect preview play mode
- Replay
- Sync roll

#### LIST MANAGEMENT

- 250 line SMPTE EDL
- Battery backed EDL
- Edit number 1-9999
- Reel number 1-9999
- Record start time
- Recall edit
- Delete edit
- Slide
- Renumber
- Set/Clear record indicators
- Scroll EDL via rotary knob
- EDL zoom
- List track
- Print after edit
- Read In/Out CMX 340x EDL

#### COMMUNICATIONS

- 5 SMPTE serial ports (3 VTR, 2 switcher)
- 2 RS-232 ports
- 1 parallel printer port
- 4 GPI ports (multi trigger per edit)

#### REFERENCE REQUIREMENTS

- Reference Black

#### POWER

- 95-132 VAC, 195-240 VAC, 50 or 60 Hz

#### ENVIRONMENT

- Temperature: 5-40°C
- Relative Humidity: 0-90%

#### PHYSICAL

- Chassis
  - Height: 5" (12.5 cm)
  - Depth: 16.5" (41.3 cm)
  - Width: 14.5" (36.3 cm)
- Keyboard
  - Height: 1.75" (4.4 cm)
  - Depth: 8.25" (20.8 cm)
  - Width: 14.5" (36.3 cm)
- Monitor
  - Height: 13.5" (33.8 cm)
  - Depth: 12.5" (31.3 cm)
  - Width: 12.5" (31.3 cm)

Specifications subject to change without notice or obligation.

# ACE 25 COMPUTERIZED EDITING SYSTEM

## Internal switchers simplify, unify, enhance...

Ampex moves to the forefront of editing technology with the exciting new ACE™ 25—an editor so fast, so capable, and so simple to operate, that edit sessions take on a new atmosphere of enjoyment.

Integrated technology, featuring an innovative system of internal switchers, is at the heart of the ACE-25 system's extraordinary design. In one elegantly simple system, ACE 25 provides a 4-machine editor, 6-input audio mixer, 6-input video switcher, audio EQ control, and on-screen audio metering. The internal switchers provide superb flexibility and efficiency, without any hint of interface complexity.

## Meeting the requirements of editors, engineers and managers

The requirements of broadcast industry professionals played a major role in determining the ACE-25 system's editing specifications. Editors desired rapid and

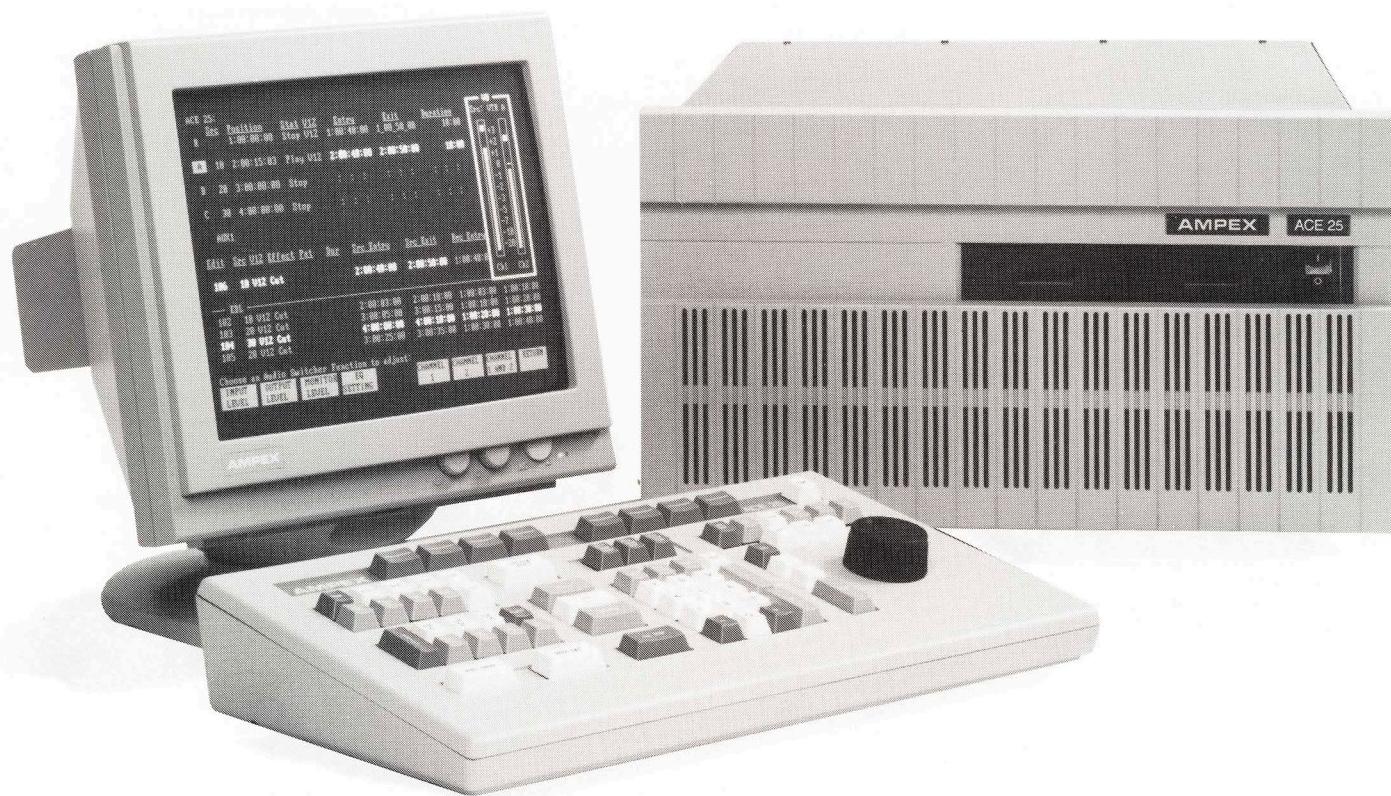
intuitive operations, superb audio control, and enhanced match-frame modes. Engineers wanted the system to be highly reliable and easy to service. Managers wanted a low cost unit, easily upgradeable, and easy for their staff to learn. Without a doubt, ACE-25 meets and exceeds these requirements.

For the editor, operation speed and simplicity comes standard with the ACE-25 system's soft-key approach to editing, yet advanced features are present on demand. Complex match-frame calculations are reduced to single-button "tags", audio split-edit control is unsurpassed in the industry, back-timing and number transfer functions are a breeze, and basic list management tools are always available. ACE-25 also provides advanced real-time "manual" modes, for edit mode changes, transport control functions, and live audio/video mixing during the edit pass.

## Breaking the cost and performance barriers...

Engineered for speed, reliability, and ease of operation, ACE-25 delivers a fully featured editor at a cost well within the reach of television newsrooms and small editing houses. Clearly, whether you're purchasing a single ACE-25 editor, or standardizing your entire editing department on the ACE-25, the integrated approach costs less, solves more problems, and delivers more functionality than any comparable system.

The result of a unique all-in-one design is an unprecedented precision editing instrument—reliable and affordable, but with the necessary flexibility and interface simplicity that editors universally are seeking. ACE-25 is a system that simplifies, unifies, and enhances your total editing environment—a system that you can depend on day in and day out, year after year.



## ACE 25 SPECIFICATIONS

### GENERAL

ACE 25 is an NTSC, PAL, AND PAL-M computer-based editor, which controls up to 4 VTRs (3 source and 1 record), and 4 GPIs. ACE 25 is a modular editing system; the standard chassis provides slots for optional internal switchers, 1 audio, 1 video.

### STANDARD FEATURES

- 80286 CPU
- One (1) Megabyte of on-board RAM
- 1000 line, SMPTE EDL, battery-backed
- Dedicated Keyboard with multi-function Rotary Knob
- Two (2) 3.5" Disk Drives
- Floppy Disk Controller
- Monochrome Display Adapter (MDA), high resolution
- 8-channel Intelligent Line Controller (ILC)
- Color Framer w/GPI
- Extender board
- Internal audio and video switcher capability
- Four (4) GPI output ports
- On-screen VU meters and EQ bar graphs with internal audio switcher
- Auto-Assembly and List Management

### FUNCTIONS

#### SYSTEM STARTUP/INITIALIZATION

- Direct access to initialization parameters
- Edit number 1-9999
- Individual reel number range 1-9999
- Preroll, Postroll
- Reaction times\*
- Edit out time in EDL
- Init Window for Program Duration\*
- PAL and PAL-M pairing indicators
- PAL and PAL-M auto 8-field, 4-field, 2-field correction
- PAL and PAL-M 8-field, 4-field, 2-field checking
- NTSC auto 2-field correction
- NTSC 2-field checking
- Color frame learn
- Save/recall system configuration on disk
- Save/recall EDL on disk, multiple files (temp 1, 2, 3)
- Save/recall EDL on disk, multiple files, file names\*
- Auto clean tail — on/off
- Auto sort — on/off

#### DEVICE/SOURCE/CHANNEL SELECTION

- Four (4) total transports
- "R" VTR
- "A" through "C" Source VTRs
- 1" spare "VTR" port\*
- Software assignable audio/video crosspoints
- AUX 1, AUX 2, AUX 3, BLACK
- Audio Channels 1 and 2

#### MOTION CONTROLS

- Rotary Knob standard
- Variable shuttle (rotary knob)
- Jog forward, Jog reverse (rotary knob)
- Variable play (rotary knob)
- Play
- Rewind, Fast Forward
- Stop, Allstop
- Cue, Search Entry, Search Exit
- Mark-in, Mark-out
- Slo-mo Set-in/Edit (Single-speed, fwd. or rev.), Ampex VTRs
- Slo-mo Set-in/Edit (Single-speed, fwd. or rev.), Sony VTRs
- "All" button controls all transports
- Manual transport control capability during preview and edit pass\*

### EDIT TRANSITION FUNCTIONS

- Cut, Dissolve, Wipe, Split, Key (with ext. video switchers)
- Cut, Dissolve, Key, Split (with int. video switchers)
- Cut, Dissolve, Split (with int. audio switcher)
- Split Video
- Split Audio 1 and 2
- Split Cut in, Split Cut out
- Split Mix in, Mix out
- Split Cut, Split Mix
- Delayed effects
- Key Cut in, Cut out
- Key Mix in, Mix out
- Key Mix in and Mix out (single edit)
- Downstream Key effects
- Downstream Fade to Black
- Downstream Fade to Quiet (with int. audio switcher)
- Wipe keys (with ext. video switchers)
- Switcher Preview Mode (Preview Dissolve, Wipe, Key from rotary knob — effect and duration)
- Switcher Preview "Play" mode
- Partial effects, set-in, rotary-knob, mark-in (Dissolve, Wipe, Key)
- Manual mode-enable (V, A1, A2) capability during preview and edit pass

### TIME CODE FUNCTIONS

- 525 full and drop frame
- 625 full frame
- Set in, Set out, Set duration
- Trim in, Trim out, Trim duration
- Trim all\*
- Mark in, Mark out
- Undo function
- Transfer Sets, Trims, Durations
- Tagging (Match frame calculations — Source Tag, Reel Tag, EDL tag, Sync tag)
- Auto set-in of matched in-time (Auto-tag)
- "Pick/Put" time code transfer from EDL to ECL
- "Pick/Put" copy edit from EDL to ECL
- "Pick/Put" copy GPI trigger from EDL to ECL
- Recall last edit
- Fill mode
- Constant register

### GENERAL PURPOSE INTERFACE (GPI)

- Four (4) GPI ports standard
- Ten (10) GPI triggers per edit
- Single GPI, multiple pulse per edit
- Full GPI EDL listing

### PERFORM EDIT/PREVIEW EDIT FUNCTIONS

- Frame accuracy with time code
- Time code or tape position editing
- Insert or Assemble modes
- Open ended edits
- Multi-tasking
- VVV Previews
- BVB , VBV Previews\*
- VV Entrance only, Exit only\*
- Effect only preview (Switcher Preview mode), rotary knob control
- Effect only preview (Switcher Preview "Play" mode)\*
- Replay
- Multiple VTR sync roll\*

### FILING SYSTEM

- 1 Operator/Hardware/Engineering File — system initialization, times, transport configuration, xpts, audio parameters, engineering parameters
- Multiple EDL files, temp filenames (temp 1, 2, 3)
- Multiple EDL Files, User-definable file names (8 characters plus 3 character extension)\*
- Battery-Backed RAM stores Operator/Hardware file\*

### LIST MANAGEMENT

- 1000 line SMPTE EDL\*
- Battery-backed EDL\*
- Record start time
- Recall edit
- Delete edit
- Ripple
- Slide
- Copy, Move
- Renumber
- Clean Tails
- Sort by record entry
- Set record, clear record indicator\*
- Scroll EDL via rotary knob
- Print after each edit\*
- Read in/Write out CMX 340x EDL format

### AUTO ASSEMBLY

- Sequential assembly
- Preview assembly
- Halt assembly
- Resume assembly
- Replay assembly
- Prompt for reel change

### POWER

- 90 – 150 VAC, 200 – 264 VAC, 50 – 60 Hz

### ENVIRONMENTAL

- Temperature: 5°C – 40°C
- Relative Humidity: 0 – 90%, non-condensing

### REFERENCE REQUIREMENTS

- Reference Black

### COMMUNICATIONS

- 8 SMPTE Serial Ports (keyboard, VTRs, external switchers), 9-pin "D"
- 2 RS-232C Serial Ports (peripheral devices), adjustable baud rate, 25-pin "D"
- 1 Parallel Printer Port, Standard IBM Printer Interface, 25-pin "D"
- 4 Independent General Purpose Interface Lines (GPI), 25-pin "D"
- 2 Monochrome Data Monitor Outputs, MDA compatible, 9-pin "D", drivers for cables up to 30 Meters.

### HUMAN INTERFACES/OPTIONS

- Dedicated Keyboard with Rotary Knob
- 14-inch High Resolution Data monitor option
- Rack mount monitor option
- Standalone comments keyboard option
- Composite Video Data Output option

### PHYSICAL

- Editor chassis, rack mountable, top accessible
  - Height: 10.5" (26.67 cm)
  - Depth: 19.5" (49.53 cm)
  - Width: 19" (48.26 cm)
- Keyboard
  - Height: 1.53" (3.88 cm) Front
  - 3.39" (8.61 cm) Back
  - Depth: 9.69" (24.61 cm)
  - Slope: 10.35°
- Data Monitor (Optional)
  - Height: 13.5" (34.29 cm)
  - Depth: 12.5" (31.75 cm)
  - Width: 12.5" (31.75 cm)

\* Available on software version 3.0

Specifications subject to change without notice or obligation.

# ACE 25

## INTERNAL AUDIO SWITCHER

### General

The ACE™ 25 internal Audio Switcher is a single-board, A/B bus audio mixer with advanced capabilities, and is available as an option to the ACE 25 editor. ACE 25's keyboard is the only interface required for full functionality. The internal Audio Switcher will function alone, or in combination with an internal or external video switcher. Advanced real time manual control modes are provided for manual audio mixing during the edit pass. A Switcher Interface Kit is required for internal switcher operation.

### Features

- Single board 6-input, dual channel audio mixer
- No control panel required; ACE 25 keyboard provides full interface
- Rotary knob control of EQ, levels, audio fader
- A/B bus format
- Field or factory installation
- Cut, Mix, Split EQ capability
- Mic/Line inputs
- Internal 1 kHz tone generator
- Software selectable output level
- On-screen VU meters and EQ bar graphs
- Advanced real time manual mixing modes\*

### Input/Output

- Provides control of 8 audio sources, 2 channels per source
- VTR 1 (source A), VTR 2 (source B), VTR 3 (source C)
- AUX 1 (Mic/Line software switchable), AUX 2, AUX 3
- Silent (Internal Source)
- Tone (Internal Source)
- 2-channel program audio output
- 2-channel monitor loop (with an external input) for external speaker control

### Effects

- Cuts
- Dissolves
- Delay dissolves
- Split A1 and A2
- Split audio inpoint, audio outpoint
- Split Cut in A1, Mix in A2
- Split Cut in A2, Mix in A1
- Split A1, A2 from Video
- Split A1, A2 (Mix), Split Video (Cut)
- Split A1, A2 (Cut), Split Video (Mix)
- Downstream fade to quiet
- Partial Mix Effects, set audio fader start and stop points via ACE 25 rotary knob control\*
- Manual input, output and fader control during preview and edit pass via ACE 25 rotary knob control\*

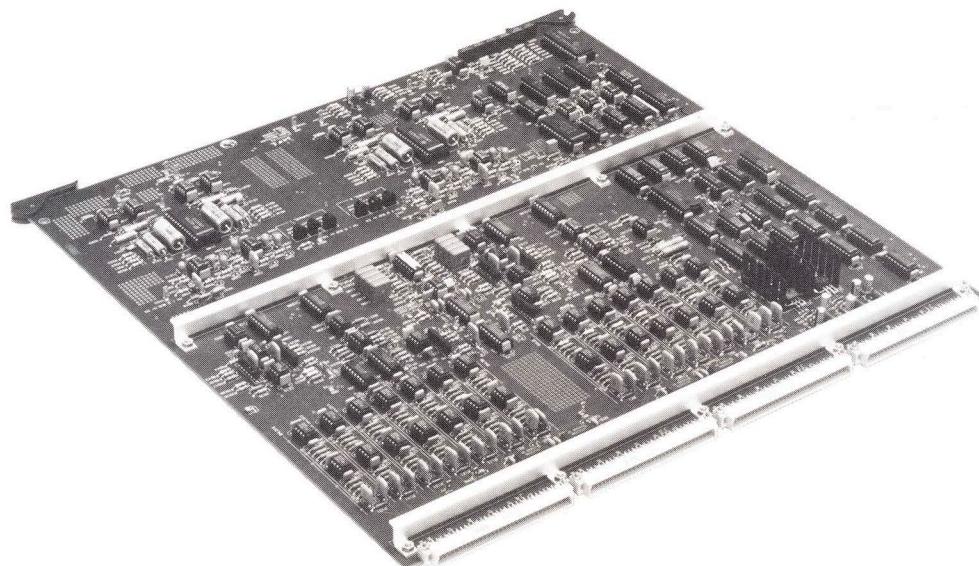
### EQ

- CRT displays high-resolution EQ bar graphs
- EQ display provides band, channel, setting, and source identification
- ACE 25 rotary knob controls three bands of EQ on A-bus and B-bus
- Low: 100 Hz, Medium: 1.0 kHz, High: 10 kHz
- Cut/Boost ±12 dB, flag adjustable in 1 dB steps
- Individual EQ settings held in memory, per source per channel

### VU

- CRT displays high resolution VU meters
- VU provides channel and source identification
- ACE 25 rotary knob controls input, output, monitor level
- VU displays peak and average readings
- Software selectable monitoring points; input bus, output bus, monitor bus

\* Available on software version 3.0



## Specifications

### Input

Line Inputs:

+ 8 dBu nominal, software selectable pads of + 4, - 4, or - 8 dBu, + 24 dBu maximum, 10k ohms balanced

Mic Inputs:

Input 4 (Aux) is Mic/Line switchable  
- 60 dBu or - 40 dBu nominal, software selectable, > 6K ohm balanced input impedance

Monitor Inputs:

+ 8 dBu nominal, software selectable pads of + 4, - 4, or - 8 dBu, + 24 dBu maximum, 10k ohms balanced

NOTE: All above levels are for balanced inputs.

### Output

Line Outputs:

+ 8 dBu nominal, software selectable pads of + 4, - 4, or - 8 dBu, + 24 dBu maximum, 600 ohms balanced

Monitor Outputs:

+ 8 dBu nominal, software selectable pads of + 4, - 4, or - 8 dBu, + 24 dBu maximum, 600 ohms balanced

Muting:

Line and Monitor Output muting when VTRs shuttle above 5x speed (software selectable)\*

Note: All above levels are for balanced outputs.

Input plus output padding cannot total more than + 4 dBu.

### Frequency Response

Line Output:

20 Hz to 20 kHz ± 0.5 dB, Ref: unity gain, 400 Hz + 8 dB input

### THD

Line Output:

<0.1% 20 Hz to 20 kHz, Ref: unity gain, + 8 dB input

### Signal-to-Noise

Line Output:

>75 dB 20 Hz to 20 kHz, Ref: unity gain + 8 dB input

### Crosstalk

Line Output:

< - 65 dB 20 Hz to 20 kHz, Ref: unity gain, + 8 dB input

### Equalizing

Low (100 Hz):

± 12 dB in 1 dB steps

Mid- (1.0 kHz):

± 12 dB in 1 dB steps

High (10 kHz):

± 12 dB in 1 dB steps

### Tone

Frequency:

1 kHz, ± 5%

Level:

0 dB ± 0.1 dB

THD:

<3%

### Power

All power is supplied internally from ACE 25's power supply.

### Communications

All communications take place via ACE 25's internal bus.

### Human Interface

All operational setups take place from the ACE 25 keyboard.

### Switcher Interface Kit

The ACE 25 Switcher Interface Kit is a prerequisite for internal switcher operations. Only one kit is required per ACE 25 system. The kit supplies all required internal electronics and interconnects, and a compact I/O panel with audio and video connectors for VTRs and auxiliary sources. The I/O panel attaches to the rear of the ACE 25 chassis, and provides standard XLR connectors for audio and BNC connectors for video.

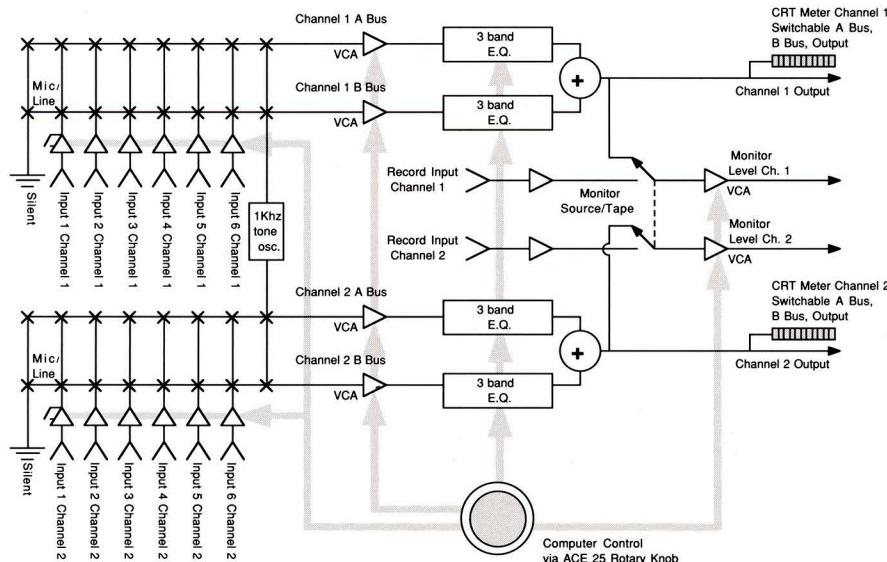
### Physical

Internal Audio Switcher and Switcher I/O Panel are designed to fit into ACE 25 chassis.

Specifications subject to change without notice or obligation.

\* Available on software version 3.0

## ACE 25 Internal Audio Switcher



# ACE 25

## INTERNAL COMPOSITE VIDEO SWITCHER with PATTERNS

### General

The ACE™ 25 internal Composite Video Switcher with Patterns is a single-board, A/B bus video switcher with advanced features including 23 wipe patterns, and is available as an option to the ACE 25. The ACE 25 keyboard is the only interface required for full functionality. The internal Composite Video Switcher will function alone or in combination with an internal or external audio switcher. A switcher interface kit is required for internal switcher operation.

### Features

- Single board, 6-input composite video switcher
- 2 external luminance key inputs
- Internal or external keys
- No control panel required. ACE 25 keyboard provides full interface.
- Rotary-knob control of key clip, gain, video fader
- A/B bus format
- Field and factory installation
- Cut, Wipe, Mix, Split, Key capability

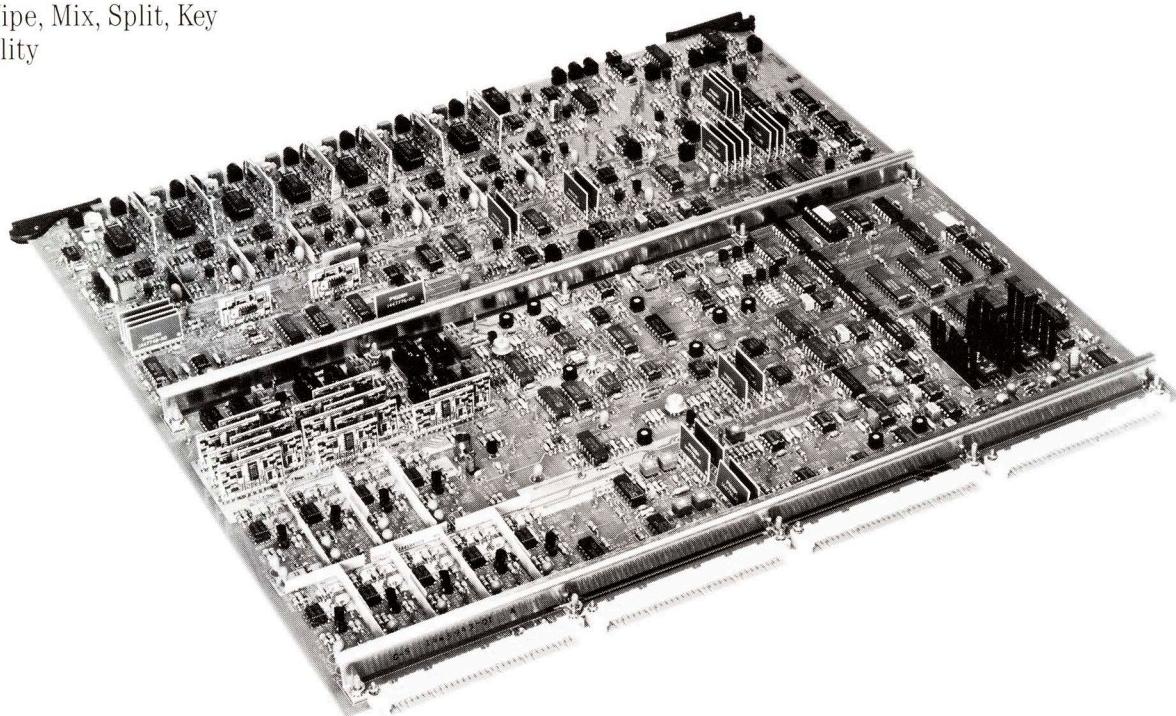
### Input/Output

- Provides control of 7 sources of videos (6 inputs plus black) VTR 1 (source A), VTR 2 (source B), VTR 3 (source C) AUX 1, AUX 2, AUX 3
- Black is generated internally from editor reference input
- 2 program outputs
- 2 external key sources

### Effects

- Cuts
- Wipes
- Dissolves
- Edge control
- Pattern position and symmetry control
- Autopan and border tracking
- Color border and background control
- Delay dissolves

- Split video input, video output
- Split video from A1 and A2
- Split video (mix), split A1, A2 (mix)
- Split video (cut), split A1, A2 (mix)
- Cut key
- Key up, key down
- Key over Mix
- Fade video plus key to/from black
- Delay keys
- Inverted keys
- Luminance key internal source over any internal source, self fill
- External key over any internal source; fill with any internal source
- Manual control of key clip level and key gain via ACE 25 knob

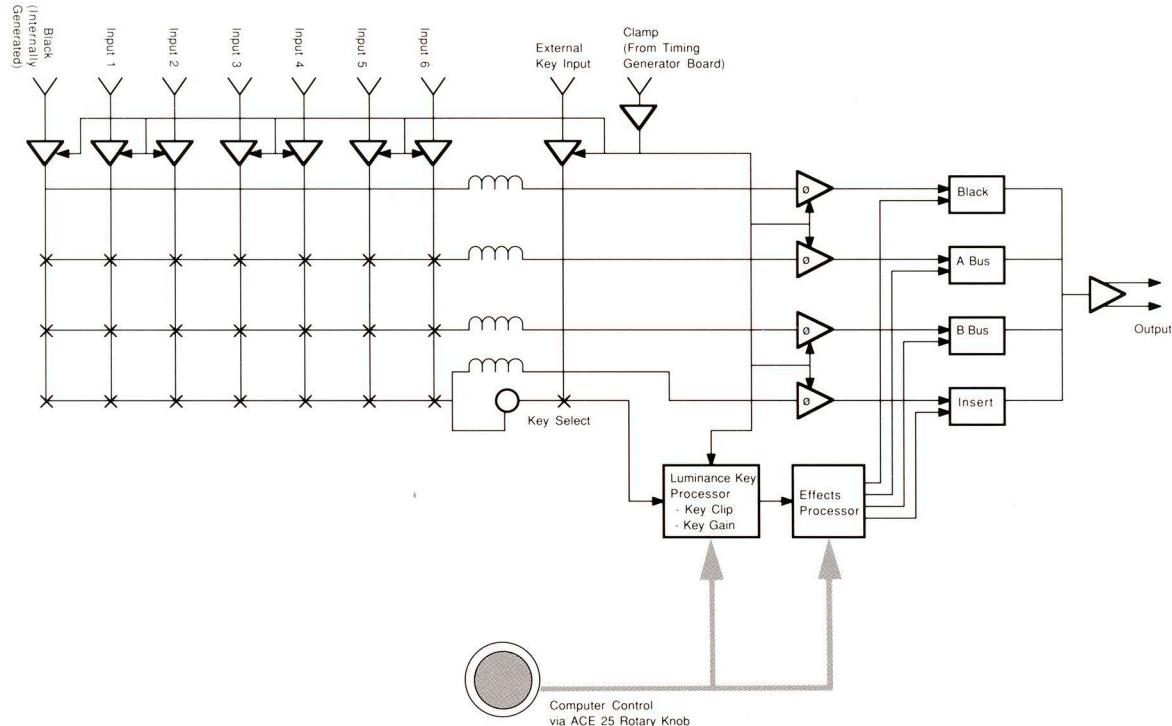


## Specifications

<u>Input</u>	
Primary Video:	1 Vpp, 75 ohms
External Luminance Key:	1.0 Vpp, 75 ohms
<u>Output</u>	
Program outputs:	1 Vpp into 75 ohms
<u>Frequency Response</u>	
Program outputs:	$\pm 0.5$ dB to 5.5 MHz, subcarrier Ref.
<u>Signal-to-Noise</u>	
Program outputs:	$\geq 55$ dB
<u>Crosstalk</u>	
Program Outputs:	$\leq -55$ dB at subcarrier
Path Length Accuracy:	$\pm 1.5$ degrees at subcarrier frequency
Gain Error:	$\leq 0.2$ dB between channels
<u>K Factor</u>	
Program Outputs:	< 1% for a 2T pulse
<u>Differential Gain</u>	
Program Outputs:	$\pm 1.5\%$ , 10–90% APL
<u>Differential Phase</u>	
Program Outputs:	$\pm 1.5$ degrees, 10–90% APL
<u>Crossfade Gain Linearity</u> :	$\leq \pm 1\%$ luminance, $\pm 1.5\%$ chrominance
<u>Crossfade Phase Linearity</u> :	$\leq \pm 1.5$ degrees

Specifications subject to change without notice or obligation.

## ACE 25 Composite Analog Switcher



## Keying Modes

### Luminance:

A luminance key can be generated from any primary video channel input or from the external luminance key input.

### Fill:

When performing an external key, any primary input video can be used as the fill video. When not performing an external key, the key source video will also be the fill video (Self fill).

## Power

All power is supplied internally from ACE 25 power supply.

## Reference Requirements

Reference video is supplied internally via ACE 25 internal bus.

## Communications

All communications take place via ACE 25 internal bus.

## Human Interface

All operational steps take place from the ACE 25 keyboard.

## Switcher Interface Kit

The ACE 25 Switcher Interface Kit is a prerequisite for internal switcher operations. Only one kit is required per ACE 25 system. The kit supplies an internal video timing board and interconnects, and a compact I/O panel with audio and video connectors for VTRs and auxiliary sources. The I/O panel attaches to the rear of the ACE 25 chassis, and provides standard BNC connectors for video and XLR connectors for audio.

## Physical

Internal Video Switcher, Video Timing Board, and Switcher I/O Panel are designed to fit into ACE 25 chassis.

# ACE 25

## General

The ACE™ 25 internal component video switcher is a single-board, A/B bus video switcher with advanced features, and is available as an option to the ACE 25 editor. ACE 25's keyboard is the only interface required for full functionality. The internal Component Video Switcher will function alone, or in combination with an internal or external audio switcher. Advanced real time manual control modes are provided for manual audio mixing during the edit pass. A Switcher Interface Kit is required for internal switcher operation.

## Features

- Single board 6-input, dual output Component Video Switcher
- External luminance key input
- Luminance keys
- Component chroma keys
- No control panel required; ACE 25 keyboard provides full interface
- Rotary knob control of key clips, gain, video fader
- A/B bus format

## INTERNAL COMPONENT VIDEO SWITCHER

- Field or factory installation
- Cut, Mix, Split, Key capability
- Advanced real time manual mixing modes\*

### Input/Output

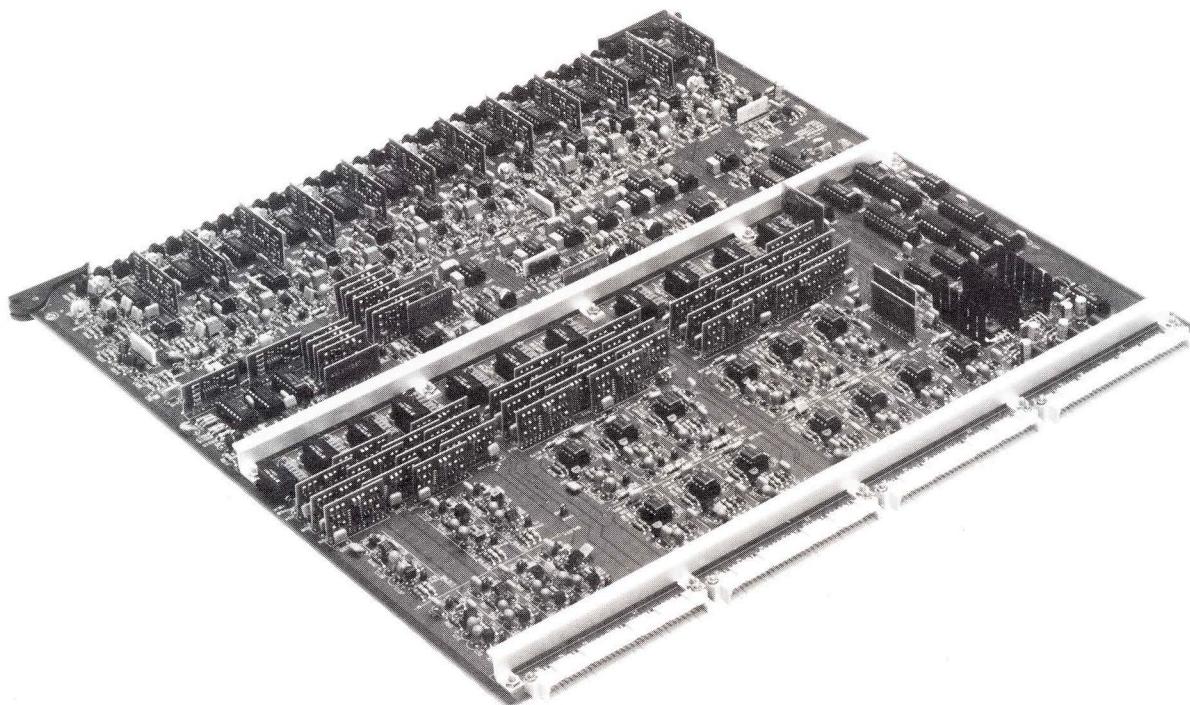
- Provides control of 7 sources of video (6 input groups of 3, plus black)
- VTR 1 (source A), VTR 2 (source B), VTR 3 (source C)
- AUX 1, AUX 2, AUX 3
- Black is generated internally from editor reference input
- 2-program outputs (2 output groups of 3)
- 1 external key source, luminance

### Effects

- Cuts
- Dissolves
- Delay dissolves
- Split video inpoint, video outpoint
- Split Video from A1, A2
- Split Video (Mix), Split A1, A2 (Cut)
- Split Video (Cut), Split A1, A2 (Mix)

- Cut key
- Key up, key down
- Key over Mix
- Fade video plus key to/from black
- Delay keys
- Inverted keys
- Luminance key internal source over any internal source, self fill
- Component chroma key internal source over any internal source, self fill
- External key over any internal source; fill with any internal source
- Partial key and mix effects, set video fader start and stop points via ACE 25 rotary knob control\*
- Manual video fader control during preview and edit pass via ACE 25 rotary knob control\*
- Manual control of key clip level, chroma key hue select, and key gain via ACE 25 rotary knob control

\*Available on software version 3.0



## Specifications

### Input

Primary Video:

Y channel: 1V p-p, 75 ohms  
 $P_b$  and  $P_r$  channels: 0.7V p-p, 75 ohms  
 1.0V p-p, 75 ohms

### Output

Program Outputs:

Y channel; 1V p-p into 75 ohms  
 $P_b$  and  $P_r$  channels:  $\pm 0.35V$  p-p into 75 ohms

### Frequency Response

All Outputs:

$\pm 0.5$  dB to 5.5 MHz, 1 MHz Ref.

### Signal-to-Noise

All Outputs

>55 dB

### Crosstalk

All Outputs

<55 dB at 1 MHz

### Timing Error

<10 nsec,  $P_b$  and  $P_r$  to Y

### Gain Error

<0.2 dB between all channels

### K Factor

All Outputs:

<1% for a 2T pulse

### Component Video Standards

The ACE 25 internal Component Video Switcher will process and generate keys for any set of three signals consisting of a Y signal and two color difference signals which do not exceed the input signal amplitude limitations as detailed above. This includes Beta, MII, SMPTE, and EBU standards.

### Keying Modes

Luminance:

A luminance key can be generated from any primary video Y channel input or from the external luminance key input.

Chrominance:

Chrominance keys can be generated from any set of primary video color difference inputs.

Fill:

When performing an external key, any primary input video can be used as the fill video. When not performing an external key, the key source video will also be the fill video (self fill).

### Power

All power is supplied internally from ACE 25's power supply.

### Reference Requirements

Reference video is supplied internally via ACE 25's internal bus.

### Communications

All communications take place via ACE 25's internal bus.

### Human Interface

All operational setups take place from the ACE 25 keyboard.

### Switcher Interface Kit

The ACE 25 Switcher Interface Kit is a prerequisite for internal switcher operations. Only one kit is required per ACE 25 system. The kit supplies all required internal electronics and interconnects, and a compact I/O panel with audio and video connectors for VTRs and auxiliary sources. The I/O panel attaches to the rear of the ACE 25 chassis, and provides standard BNC connectors for video and XLR connectors for audio.

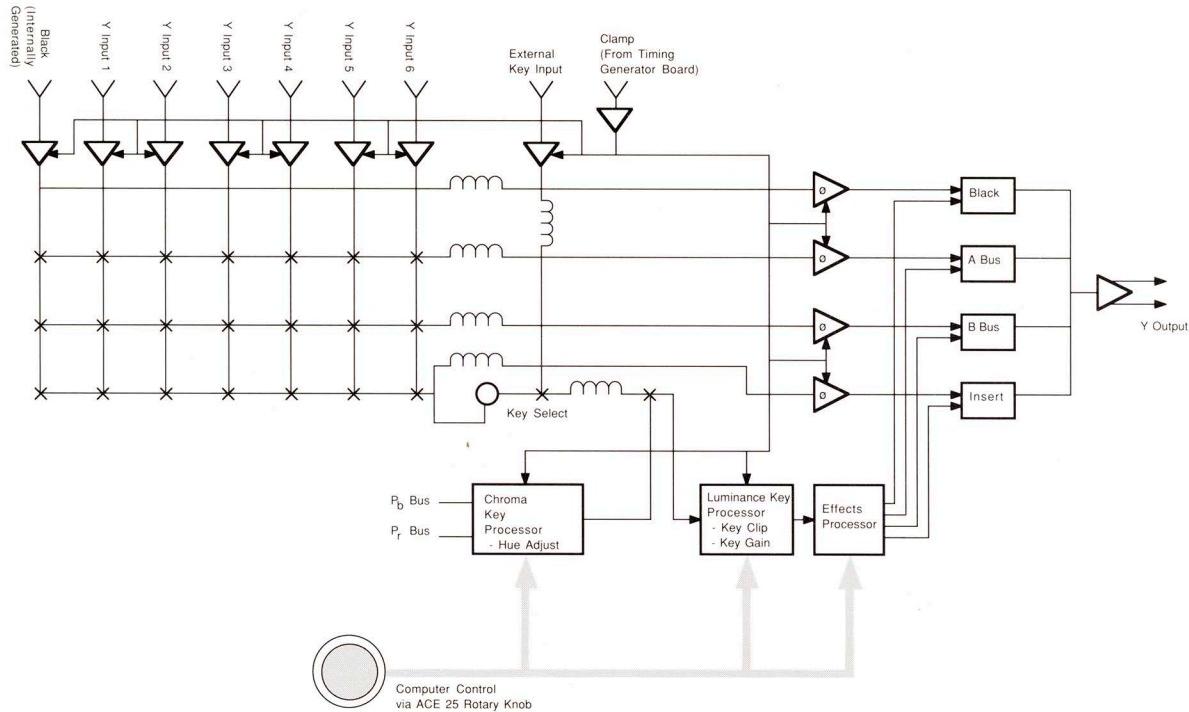
### Physical

Internal Video Switcher, Video Timing Board, and Switcher I/O Panel are designed to fit into ACE 25 chassis.

Specifications subject to change without notice or obligation.

## ACE 25 Component Analog Switcher

Single Channel Representation



# PENGUIN

## General

The Penguin switcher is a rack-mounted, composite audio-video switcher and effects generator designed and configured for use with ACE™ computerized editing systems. ACE 25, ACE Micro, ACE Standard and ACE 200 edit controllers may all be used with the Penguin switcher.

The switcher is a self-contained unit that may also be used as an audio-only switcher. A built-in serial interface allows direct connection and communication with any ACE edit controller, thus eliminating the need for a switcher front panel or keyboard. All functions are programmed and controlled from any ACE editor keyboard. No additional interface hardware is required.

A Penguin switcher controls eight video inputs plus black, and two video outputs. It also controls as many as three channels of audio; channels 2 and 3 are optional. Each audio channel has eight inputs and one monaural output. (See rear panel photo.)

## DEDICATED EDITING SWITCHER

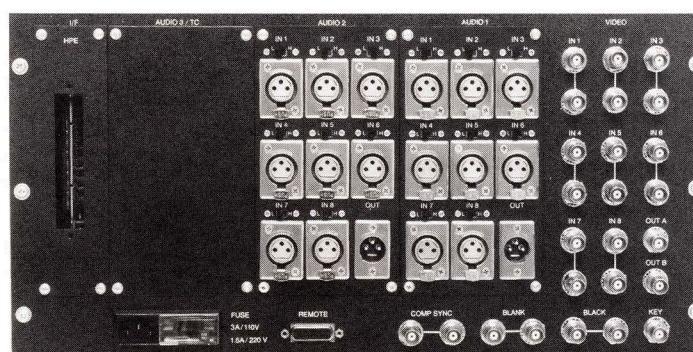
The video portion of the switcher consists of a crosspoint circuit and three cascaded mix/effects (M/E) amplifiers. The first M/E performs wipes and dissolves, the second downstream M/E performs luminance keying on the first, and the last performs downstream fades or cuts to and from black. This layered configuration allows three effects to be used simultaneously when the switcher is controlled by an ACE 25 editor. Individual effects can be controlled by the other ACE edit controllers.

The mix/wipe M/E performs cuts, dissolves and 23 wipe patterns between sources. Wipes may be programmed for either hard or soft edges and — like dissolves — are reversible. The key mode provides a

fade-up or -down of a keyed foreground into a background. The key input is used to cut a "hole" in the background in the shape of the video to be keyed, such as a title or a graphic. The foreground of the key fills in the "hole" in the background. The complete picture may also be faded from or to black. Fade durations are programmable and are determined by the operator.

## Features

- Serial interface to all ACE editors
- An eight-channel unit; eight video inputs and eight audio inputs on each of three audio channels. Two channels are used by the ACE 25 editor.



## Features (Continued)

- Controls video and each audio channel independently
- Layered mix/effect amplifiers
- Cuts between two sources
- Dissolve mode provides dissolves between sources
- Wipe mode provides 23 wipe patterns between sources
- Key mode provides fade-up or -down of a keyed foreground into a background
- Black M/E amplifier provides fades or cuts to and from an externally supplied black signal
- Durations of all effects are user-programmable
- Effects may be layered simultaneously when controlled by an ACE 25 editor
- Controls each audio and video channel independently
- Controls both rate and position during the effect transition, allowing speed variance and pause when used with current ACE Standard, ACE 200 and ACE Micro editors, and later software versions of the ACE 25 model.  
(Ask your Ampex representative for details.)
- Partial effects are selectable
- No control panel required
- Bi-directional SMPTE/RS-422 serial data lines to the ACE editor
- Available in NTSC and PAL

## Specifications

### PHYSICAL

Dimensions: Standard 19-inch rack mounting  
(17-inch without rack-mount brackets)  
8<sup>3</sup>/<sub>4</sub>" (H) x 15<sup>1</sup>/<sub>2</sub>" (D)  
Weight: 36 lb

### POWER REQUIREMENTS

Input Power: 3 amps @ 95-125 volts, 50-60 Hz  
1.5 amps @ 210-250 volts, 50-60 Hz

### AMBIENT OPERATING CONDITIONS

Temperature 0-45 degrees C.  
Humidity: 10% to 90% RH (noncondensing)

### VIDEO

Frequency Response: ± 0.2 dB to 6 MHz  
± 0.5 dB to 6 MHz to 9 MHz  
K Factor (2T Pulse): 1% maximum  
Crosstalk: 60 dB @ 3.58 MHz, 57 dB @ 4.43 MHz,  
all inputs driven synchronously  
Signal-to-Noise: 60 dB wideband  
Return Loss (input): -38 dB to 5 MHz  
Differential Gain and Phase: Less than 1% and 1°  
Chrominance/Luminance Delay: Less than ± 10 ns  
Differential Path Delay: ± 10 maximum  
Line/Field Tilt: Less than 1%  
Chrominance Phase Shift (during mix): Less than 2° p-p  
Video Inputs: 1.0V nominal, high impedance looped BNC  
Timing Inputs: Comp Sync: 4.0 Vp-p nominal looping  
Comp Blanking: 4.0 Vp-p nominal looping  
Video Outputs: 75 ohms, unity gain

### AUDIO

Input Impedance: 600 ohms/10 kilohms, switchable, balanced  
Input Level Maximum: +20 dBm  
Input CMRR: Greater than 50 dB at 1 kHz  
Frequency Response: 20-20 kHz, ± 0.5 dB (ref. 1 kHz)  
THD: 20-20 kHz, less than 0.5% (at + 8 unweighted)  
Signal-to-Noise: 82 dB (ref. +20) (unweighted)  
Crosstalk: 70 dB 20-20 kHz (ref. +8 to all other inputs)  
Output Levels: +8 dBm nominal, +20 dBm max  
Output Impedance: Less than 30 ohms, balanced, short-circuit protected

Specifications subject to change without notice or obligation.

FOR INFORMATION ON AMPLEX BROADCAST VIDEO PRODUCTS CONTACT THE VIDEO SALES MANAGER NEAREST YOU.

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# ACE MIF

## MACHINE INTERFACE

### General

The ACE™ MIF accepts data from the ACE editor via RS-422 serial communications, and provides parallel data to the specified audio / video transport. One ACE MIF is required for each parallel VTR or ATR connected to the ACE editor.

### Features

- RS-422 input, Parallel output
- Reference video loop
- Time code loop
- Rack Mountable
- Communicates via VPR-3 protocol
- Works with all ACE Editors

### Mechanical

- Dimensions: 3.5" H x 17" W x 13" D
- Weight: 16 lbs. (ship weight: 22 lbs.)

### Electrical

- Voltage: Switch selectable, 100 / 110 / 220 / 240
- Frequency: 50 / 60 Hz
- Power: 40 watts

### Standard Accessories

- Power cord
- Instruction Manual

### Interfaces

#### Video Transports

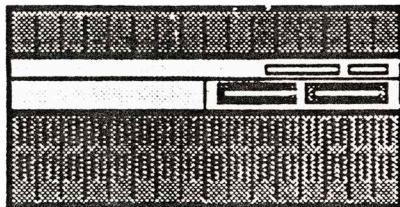
- JVC 8250
- JVC 6650
- JVC 5550
- JVC 8600
- Sony VO-5800
- Sony VO-5850

#### Audio Transports

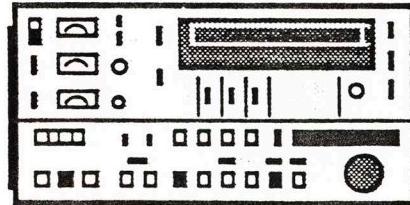
- AEG M20
- Akai MG14D
- Ampex ATR-100
- Ampex ATR-102
- Ampex ATR-104
- Ampex MM-1100
- Ampex MM-1200
- Fostex (Frequency)
- Mitsubishi x86
- Mitsubishi x800
- Mitsubishi x850
- Otari DTR-900
- Otari MTR-10 II
- Otari MTR-10C
- Otari MTR-12
- Otari MTR-12 II
- Otari MTR-20
- Otari MTR-90
- Otari MTR-90-2
- Otari MX-55
- Otari MX-70
- Otari MX-80
- Otari MX-5050 Mk III Version 2
- Otari MX-5050 Mk III Version 3
- Otari MX-7800
- Sony / MCI JH 16
- Sony / MCI JH 24
- Sony / MCI JH 110
- Sony / MCI JH 110B
- Sony / MCI JH 110C
- Sony APR-5000
- Sony PCM-3102
- Sony PCM-3202
- Sony PCM-3324
- Soundcraft Saturn
- Studer A-80 vu Mk II/III Frequency
- Studer A-80 vu Mk II/III Voltage
- Studer A-800 Mk III
- Studer A-810
- Studer A-820
- Tascam / Teac 42
- Tascam / Teac 44
- Tascam / Teac 48
- Tascam / Teac 52
- Tascam / Teac 58
- Tascam / Teac 85-16
- Tascam / Teac 388 Studio B
- Tascam / Teac MS-16

Specifications subject to change without notice or obligation.

ACE 25



VO-5850



ACE MIF

Serial Data

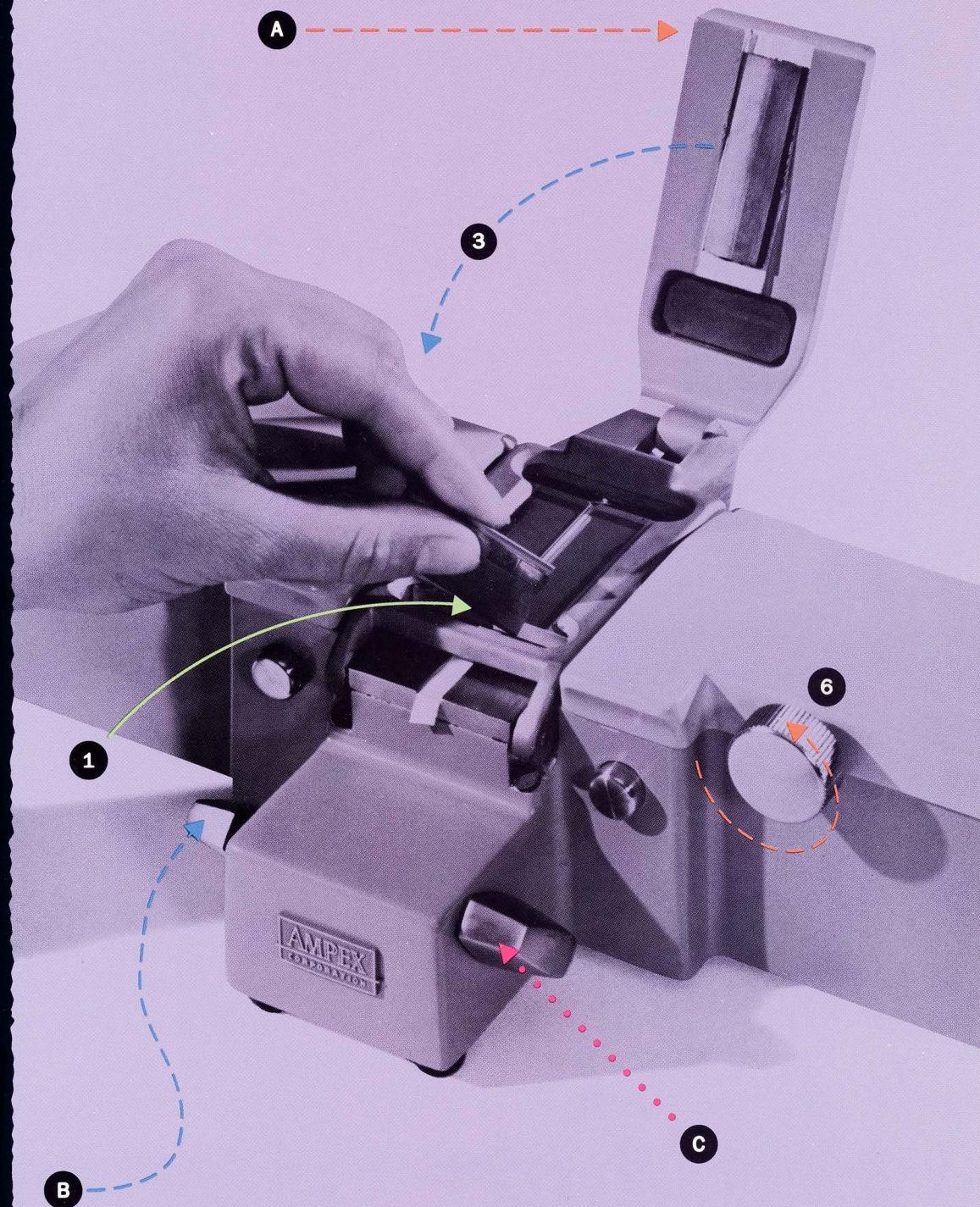
Parallel Data

# I

In 1962, Ampex introduced the world's first electronic editor. In keeping with this tradition of technological innovation, the Ampex family of ACE™ editors continues to offer features and performance that truly redefines the editing environment. After you cut your first program with an ACE editor, its advantages become clear.

Because ACE editors are both software based and modular in design, they are superior longterm investments, both for the operator and the engineer. Software enhancements improve the system capability without making the hardware obsolete. Creativity and serviceability are balanced in system design for the broadcast and post-production world of the 1990s.

ACE editors are "engineered for editors" in every area. Functionality is intuitive. And human interface is virtually transparent. Each feature set has been designed and perfected by working editors to ensure that it meets your demanding professional requirements. With an ACE editor you concentrate on picture and sound...not on buttons and numbers.



1968



1980



1988



1990

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